

## **ABSTRACT**

A combiner for use in a spatial diversity radio receiver which receives multiple data signals through spaced apart antennae. The combiner includes a receiving component configured for receiving strength-indicative signals, each strength-indicative signal being indicative of the strength of one of the received data signals, and demodulated data signals. A control signal generating component configured for generating control signals generates control signals responsive to the strength-indicative signals. A combining component configured for combining signals combines, in linear proportions determined by the control signals, those of the demodulated data signals which are both above a predetermined strength threshold level ("combiner threshold") and differ in strength by less than a predetermined margin of preferably between 3dB and 12dB (e.g. 6dB) to provide a combined output data signal. When more than the margin separates the signal strengths, only the strongest signal is used. A spatial diversity wireless communications (radio) receiver includes multiple receiving components having spaced-apart antennae, each receiving component providing both a signal indicative of received signal strength and a demodulated signal output, a combiner as aforesaid to provide an output data signal and means for evaluating the output data signal. Preferably, rapidly-fading signals are identified by evaluating second derivative signals of the strength-indicative signals, and weighted accordingly if a non-fading signal is available.

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